What is claimed is:

1. A calibration system for calibrating a radar system, the radar system having a detection zone and being adapted to determine a sensed position at a sensed time of a target in the detection zone, the system comprising:

a calibration target having a non-augmented radar cross-section, the calibration target comprising a UAV having a position device and a signal augmentation device, the position device being adapted to determine an actual position of the UAV at an given time, the signal augmentation device being adapted to augment the radar cross-section of the target, and

a calibration device in communication with the calibration target and adapted to receive the actual position from the position device of the calibration target, the calibration device being further in communication with the radar system and adapted to receive the sensed position of the target from the radar system, the calibration device being further adapted to detect a system error representing the difference between the actual position and the sensed position and provide the system error to the radar system.

2. A system as set forth in claim 1 wherein the non-augmented radar cross-section of said calibration device is less than the radar cross-section of manned aircraft.

3. A system as set forth in claim 2 wherein the non-augmented radar cross-section is less than about one square meter.

4. A system as set forth in claim 1 wherein the signal augmentation device is electronically adapted to receive a signal from the radar system and return an amplified signal to the radar system.

5. A system as set forth in claim 1 wherein the signal augmentation device is a reflector.

6. A method of calibrating a radar system, the radar system being adapted to determine a sensed position at a sensed time of a target in a detection zone, the method comprising:

providing a calibration target, the calibration target comprising a UAV having a control system and a position device, the control system being adapted to navigate the UAV and the position device being adapted to determine an actual position of the UAV,

navigating the calibration target within the detection zone;

sensing a sensed position of the calibration target at a selected time;

determining the actual position of the calibration target at the selected time;

comparing the sensed and actual positions; and

using said comparison to reduce sensing error of said radar system.

7. A method of detecting the true radar range of a radar system under existing atmospheric conditions and with the existing radar condition, the radar system being adapted to determine a sensed position at a sensed time of a target in a detection zone, the method comprising:

providing a calibration target, the calibration target comprising a UAV having a position device and a signal augmentation device, the position device being adapted to determine an actual position of the UAV, the signal augmentation device being adapted to augment the radar cross-section of the calibration target to an augmented radar cross-section;

navigating the target between the detection zone and outside the detection zone; and

determining the true radar range of the radar system by identifying the actual position of the target when the target is located at the maximum range at which the radar system senses the target.

8. A method as set forth in claim 7 further comprising:

augmenting the radar cross-section of said calibration target.

9. A method as set forth in claim 7 further comprising:

prior to the moving step, setting the signal augmentation device such that the calibration target has an augmented radar cross-section.

10. A method as set forth in claim 9 wherein the signal augmentation device is electronically adapted to receive a signal from the radar system and return an amplified signal to the radar system.

11. A method as set forth in claim 9 wherein the signal augmentation device is a reflector.

12. A method as set forth in claim 7 wherein the non-augmented radar cross-section of said calibration device is less than the radar cross-section of manned aircraft.

13. A method as set forth in claim 7 wherein the non-augmented radar cross-section is less than about one square meter.

14. A system for calibrating a radar system, the radar system having a detection zone and being adapted to determine a sensed position at a given time of a target in the detection zone, the system comprising:

a UAV;

a position device adapted to determine an actual position of the UAV at a given time; and

a calibration device in communication with said position device adapted to receive from said position device the actual position of the UAV, the calibration device also in communication with said radar system and adapted to receive from said radar system the sensed position of the UAV, the calibration device being further adapted to detect a radar system error from the actual and sensed positions for use in calibrating said radar system.

15. A system as set forth in claim 14 further comprising an augmentation device for augmenting the radar cross-section of the UAV.

16. A system as set forth in claim 15 wherein the non-augmented radar cross-section of the UAV is less than about one square meter.

17. A system as set forth in claim 15 wherein the augmentation device is electronically adapted to receive a radar signal from said radar system and return an amplified signal to the radar system.

18. A system as set forth in claim 15 wherein the augmentation device is a reflector.

19. A method of calibrating a radar system, the radar system being adapted to determine a sensed position at a sensed time of an object in a detection zone, the method comprising:

providing a UAV;

navigating the UAV within the detection zone;

sensing a sensed position of the UAV at a selected time;

determining the actual position of the UAV at the selected time;

comparing the sensed and actual positions; and

using said comparison to calibrate said radar system.

20. A method of detecting the true radar range of a radar system under existing atmospheric conditions, the radar system being adapted to determine a sensed position at a given time of an object in a detection zone, the method comprising:

providing a calibration target;

providing an augmentation device adapted to augment the radar cross-section of the calibration target;

selecting a radar cross-section of the calibration target using the augmentation device;

navigating the calibration target between the

detection zone and outside the detection zone; and

determining the true radar range of the radar system by determining the actual position of the calibration target when the calibration target is located at the maximum range at which the radar system senses the calibration target.

21. A method as set forth in claim 20 wherein said calibration target is an UAV.

22. A method as set forth in claim 20 wherein the augmentation device is electronically adapted to receive a signal from the radar system and return an amplified signal to the radar system.

23. A method as set forth in claim 20 wherein the augmentation device is a reflector.